

CLAIMS

1. A coding method of an excitation vector waveform of a codebook divided into a plurality of channels capable
5 of outputting a plurality of excitation vector waveforms,
wherein said coding method associates an excitation
vector waveform candidate of a predetermined channel with
an excitation vector waveform candidate of another
channel, and makes a code of an excitation vector waveform
10 searched for by means of a predetermined algorithm a code
of an excitation vector of a codebook.

2. The coding method according to claim 1, wherein an
excitation vector waveform is searched for by means of
15 a search algorithm of n-fold loops (where n is a number
of channels) that changes an excitation vector waveform
candidate within a loop in accordance with an excitation
vector waveform candidate outside a loop.

20 3. The coding method according to claim 1, wherein a
codebook is a stochastic codebook used in CELP.

4. The coding method according to claim 3, wherein a
stochastic codebook is an algebraic codebook, and an
25 excitation vector waveform candidate is represented by
a pulse position.

5. The coding method according to claim 1, wherein an

excitation vector waveform candidate of a predetermined channel is associated by a multiplication operation result of a number representing an excitation vector waveform candidate of another channel.

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6. The coding method according to claim 5, wherein a multiplication operation result is associated with an index of a pulse position candidate group indicating an excitation vector waveform candidate of a predetermined
10 channel.

7. The coding method according to claim 5, wherein a multiplication operation result is associated with a pulse position indicating an excitation vector waveform
15 candidate of a predetermined channel.

8. The coding method according to claim 6, wherein association is performed by addition of multiplication operation results.

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9. A speech coding apparatus that codes an excitation vector of a codebook by means of the coding method according to claim 1.

25 10. A speech decoding apparatus that performs decoding of an excitation vector of a codebook corresponding to the coding method according to claim 1.